

What is claimed is:

1. In an image forming apparatus comprising a fixing device configured to fix a toner image on a sheet with heat at a nip between a fixing member accommodating a heat source and a pressing member not accommodating a heat source, consecutive sheets are driven out of said fixing device at a variable interval without a number of sheets to be output within a preselected period of time being varied.

2. The apparatus as claimed in claim 1, wherein the interval comprises a time interval between output of a preceding sheet and output of a following sheet.

3. The apparatus as claimed in claim 2, wherein the interval comprises a distance between a trailing edge of the preceding sheet and a leading edge of the following sheet.

4. The apparatus as claimed in claim 3, wherein to vary the interval, the interval between the trailing edge of the preceding sheet and the leading edge of the following sheet is varied without a conveying speed on a sheet path being varied.

5. The apparatus as claimed in claim 4, wherein the interval is selected to be an interval α shorter than a usual interval γ for sheets conveyed to said fixing device just after a start of sheet feed, then selected to be an interval β longer than said usual interval γ for a same

number of sheets as conveyed just after the start of sheet feed, and then selected to be said usual interval γ which is a mean value of the intervals α and α .

6. The apparatus as claimed in claim 5, wherein assuming that the interval is not reduced, then a period of time just after the start of sheet feed comprises a time zone in which a fixing temperature drops below a lower limit after the start of sheet feed due to absorption of heat by said pressing member.

7. The apparatus as claimed in claim 6, wherein the number of sheets to be output within the preselected period of time comprises a number of sheets to be processed for image formation for a unit period of time, which is determined in accordance with a sheet size beforehand as a specification of an image forming apparatus used, and

the usual interval comprises an interval to hold when image formation is executed with the number of sheets to be output within the preselected period of time without the interval between sheets being varied.

8. The apparatus as claimed in claim 1, wherein the interval comprises a distance between a trailing edge of the preceding sheet and a leading edge of the following sheet.

9. The apparatus as claimed in claim 8, wherein to vary the interval, the interval between the trailing edge

of the preceding sheet and the leading edge of the following sheet is varied without a conveying speed on a sheet path being varied.

10. The apparatus as claimed in claim 9, wherein the interval is selected to be an interval α shorter than a usual interval γ for sheets conveyed to said fixing device just after a start of sheet feed, then selected to be an interval β longer than said usual interval γ for a same number of sheets as conveyed just after the start of sheet feed, and then selected to be said usual interval γ which is a mean value of the intervals α and α .

11. The apparatus as claimed in claim 10, wherein assuming that the interval is not reduced, then a period of time just after the start of sheet feed comprises a time zone in which a fixing temperature drops below a lower limit after the start of sheet feed due to absorption of heat by said pressing member.

12. The apparatus as claimed in claim 11, wherein the number of sheets to be output within the preselected period of time comprises a number of sheets to be processed for image formation for a unit period of time, which is determined in accordance with a sheet size beforehand as a specification of an image forming apparatus used, and the usual interval comprises an interval to hold when image formation is executed with the number of sheets to

be output within the preselected period of time without the interval between sheets being varied.

13. The apparatus as claimed in claim 1, wherein to vary the interval, the interval between the trailing edge of the preceding sheet and the leading edge of the following sheet is varied without a conveying speed on a sheet path being varied.

14. The apparatus as claimed in claim 13, wherein the interval is selected to be an interval α shorter than a usual interval γ for sheets conveyed to said fixing device just after a start of sheet feed, then selected to be an interval β longer than said usual interval γ for a same number of sheets as conveyed just after the start of sheet feed, and then selected to be said usual interval γ which is a mean value of the intervals α and β .

15. The apparatus as claimed in claim 14, wherein assuming that the interval is not reduced, then a period of time just after the start of sheet feed comprises a time zone in which a fixing temperature drops below a lower limit after the start of sheet feed due to absorption of heat by said pressing member.

16. The apparatus as claimed in claim 15, wherein the number of sheets to be output within the preselected period of time comprises a number of sheets to be processed for image formation for a unit period of time, which is

determined in accordance with a sheet size beforehand as a specification of an image forming apparatus used, and

the usual interval comprises an interval to hold when image formation is executed with the number of sheets to be output within the preselected period of time without the interval between sheets being varied.

17. The apparatus as claimed in claim 1, wherein the interval is selected to be an interval α shorter than a usual interval γ for sheets conveyed to said fixing device just after a start of sheet feed, then selected to be an interval β longer than said usual interval γ for a same number of sheets as conveyed just after the start of sheet feed, and then selected to be said usual interval γ which is a mean value of the intervals α and β .

18. The apparatus as claimed in claim 17, wherein assuming that the interval is not reduced, then a period of time just after the start of sheet feed comprises a time zone in which a fixing temperature drops below a lower limit after the start of sheet feed due to absorption of heat by said pressing member.

19. The apparatus as claimed in claim 18, wherein the number of sheets to be output within the preselected period of time comprises a number of sheets to be processed for image formation for a unit period of time, which is determined in accordance with a sheet size beforehand as

a specification of an image forming apparatus used, and the usual interval comprises an interval to hold when image formation is executed with the number of sheets to be output within the preselected period of time without the interval between sheets being varied.

20. The apparatus as claimed in claim 1, wherein assuming that the interval is not reduced, then a period of time just after the start of sheet feed comprises to a time zone in which a fixing temperature drops below a lower limit after the start of sheet feed due to absorption of heat by said pressing member.

21. The apparatus as claimed in claim 20, wherein the number of sheets to be output within the preselected period of time comprises a number of sheets to be processed for image formation for a unit period of time, which is determined in accordance with a sheet size beforehand as a specification of an image forming apparatus used, and

the usual interval comprises an interval to hold when image formation is executed with the number of sheets to be output within the preselected period of time without the interval between sheets being varied.

22. In an image forming apparatus comprising a fixing device configured to fix a toner image on a sheet with heat at a nip between a fixing member accommodating a heat source and a pressing member not accommodating a heat source, when

said nip coincides with an interval between a trailing edge of a preceding sheet and a leading edge of a following sheet, drive of said fixing member is temporarily stopped without varying a number of sheets to be output within a preselected period of time.

23. The apparatus as claimed in claim 22, wherein a temporary stop of the drive occurs every time a preselected number of sheets are conveyed via said fixing device.

24. The apparatus as claimed in claim 23, wherein duration of the temporary stop is fixed.

25. The apparatus as claimed in claim 24, wherein the temporary stop of the drive starts before a fixing temperature, tending to drop due to absorption of heat of said fixing member by the sheets, drops to a lower limit and ends when said fixing temperature, dropping toward said lower limit, again starts rising.

26. The apparatus as claimed in claim 25, wherein the fixing temperature repeatedly rises and drops, so long as the sheets are conveyed, within a range between a target fixing temperature and a target lower limit along a saw-toothed waveform in a time domain.

27. The apparatus as claimed in claim 23, wherein duration of the temporary stop of the drive is so selected as to cause the fixing temperature, dropped due to

conveyance of the sheets, to again start rising to at least a level above a target fixing temperature.

28. The apparatus as claimed in claim 27, wherein the duration of the temporary stop of the drive is made shorter at a second stop and successive stops than at a first stop, which occurs just after the start of sheet feed, as the pressing member is heated by said fixing member.

29. The apparatus as claimed in claim 23, wherein the nip has a variable width.

30. The apparatus as claimed in claim 23, wherein said fixing member comprises a fixing roller having small thermal capacity and accommodating the heat source, and said pressing member comprises a pressing roller formed of an elastic material.

31. The apparatus as claimed in claim 30, wherein said fixing device comprises temperature sensing means, and the heat source is selectively turned on or turned off in accordance with an output of said temperature sensing means such that a temperature at the nip coincides with a target fixing temperature.

32. The apparatus as claimed in claim 30, wherein said fixing member comprises either one of a sheet and a belt.

33. The apparatus as claimed in claim 22, wherein the nip has a variable width.

34. The apparatus as claimed in claim 33, wherein said fixing member comprises a fixing roller having small thermal capacity and accommodating the heat source, and said pressing member comprises a pressing roller formed of an elastic material.

35. The apparatus as claimed in claim 34, wherein said fixing device comprises temperature sensing means, and the heat source is selectively turned on or turned off in accordance with an output of said temperature sensing means such that a temperature at the nip coincides with a target fixing temperature.

36. The apparatus as claimed in claim 34, wherein said fixing member comprises either one of a sheet and a belt.

37. The apparatus as claimed in claim 22, wherein said fixing member comprises a fixing roller having small thermal capacity and accommodating the heat source, and said pressing member comprises a pressing roller formed of an elastic material.

38. The apparatus as claimed in claim 37, wherein said fixing device comprises temperature sensing means, and the heat source is selectively turned on or turned off in accordance with an output of said temperature sensing means such that a temperature at the nip coincides with a target fixing temperature.

39. The apparatus as claimed in claim 37, wherein said fixing member comprises either one of a sheet and a belt.

40. In a fixing device for fixing a toner image on a sheet with heat at a nip between a fixing member being heated and a pressing member not being heated, said fixing member comprises a heat roller accommodating a heat source therein and made up of an aluminum tube and a silicone rubber layer covering an outer periphery of said aluminum tube, and

said pressing member comprises a solid press roller formed of foam silicone rubber.

41. The device as claimed in claim 40, wherein said heat source comprises an electric heater configured to selectively generate heat at a center portion or opposite end portions thereof in accordance with a size of the sheet.